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SERIAL NO. 10/008,216  
PATENT

**REMARKS**

Claims 1-20 are pending in this application.

Claims 1-20 have been finally rejected.

No claims have been allowed.

Claims 9 and 18 have been amended.

Claims 1-20 remain in the application.

Reconsideration of Claims 1-20 is respectfully requested.

Claims 9 and 18 have been amended solely to correct typographical errors without altering the scope of the claim. Inadvertent uses of the incorrect symbol "x\_i" have been replaced by the symbol "x\_j".

**I. ALLOWABLE SUBJECT MATTER**

The Applicant thanks the Examiner for the indication that Claims 9 and 18 would be allowable if rewritten in independent form to incorporate the elements of their respective base claims and any intervening claims. Because the Applicant believes that the remaining claims in this application are allowable, the Applicant has not rewritten Claims 9 and 18 in independent form.

**II. REJECTION UNDER 35 U.S.C. § 103**

The Office Action of April 15, 2004, finally rejects Claims 1-3, 5, 6, 8, 10-12, 14, 15 and 19 under 35 U.S.C. § 103(A) as being unpatentable over U.S. Patent No. 5,880,441 to Gillespie et al.

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("Gillespie") in view of U.S. Patent No. 6,255,604 to Tokioka et al. ("Tokioka"). The Office Action rejects claims 4, 7, 13, 16, 17 and 20 under 35 U.S.C. § 103(A) as being unpatentable over *Gillespie* and *Tokioka* as applied to Claims 1-3, 5, 6, 8, 10-12, 14, 15 and 19 and further in view of U.S. Patent No. 5,825,352 to Bisset et al. ("Bisset"). These rejections are respectfully traversed.

In *ex parte* examination of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. MPEP § 2142; *In re Fritch*, 972 F.2d 1260, 1262, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992). The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention is always upon the Patent Office. MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984). Only when a *prima facie* case of obviousness is established does the burden shift to the applicant to produce evidence of nonobviousness. MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). If the Patent Office does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of a patent. *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Grabiak*, 769 F.2d 729, 733, 226 U.S.P.Q. 870, 873 (Fed. Cir. 1985).

A *prima facie* case of obviousness is established when the teachings of the prior art itself suggest the claimed subject matter to a person of ordinary skill in the art. *In re Bell*, 991 F.2d 781, 783, 26 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1993). To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to

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modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not based on the applicant's disclosure. MPEP § 2142.

**A. The Gillespie and Tokioka References**

The *Gillespie* reference describes a touch sensor pad with a matrix of conductive lines. (*Gillespie*, col. 5, lines 55-58). A first set of conductive lines runs in one direction and is separated by an insulating layer from a second set of conductive lines running in a generally perpendicular direction. (*Col. 5, lines 58-61*). A second insulating layer is placed over the two sets of conductive lines, so that significant capacitive coupling occurs between the conductive lines and a finger placed on the surface of the second insulating layer. (*Col. 5, lines 61-65*). The circuitry of *Gillespie* senses the capacitance of one set of conductive lines to determine the position of a touch point in the X direction, and the capacitance of the other set of conductive lines to determine the position of the touch point in the Y direction. (*Col. 12, lines 25-33*). When a finger touches the surface of the touch sensor pad, it raises the capacitance of those conductive lines running underneath it. (*Column 12, lines 48-51*). The circuitry of *Cillespie* measures the capacitance of each individual conductive line, digitizes it and provides the digitized capacitance of all conductive lines in each set to an arithmetic unit that determines the position of the finger touching the surface. (*Figure 3*). The conductive lines in a set are numbered from 0 to *n*, and the number of the line at the center of the set

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of lines under the touching finger is determined by taking the weighted average of all the individual measured capacitances in the set of lines. (*Col. 19, lines 40-58*).

In contrast, *Tokioka* describes a touch panel composed of parallel, spaced-apart conductive films that come into contact only when pressed upon by a finger or stylus. (*Tokioka, Figure 3; col. 4, lines 23-27*). The conductive films are rectangular and each film has a pair of electrodes along one of its pair of opposing edges. (*Figure 3*). The films have a uniform distribution of resistance, so that when the films are touched and brought into contact they form a resistance bridge, whose resistance values are proportional to the distances of the touch point from the electrodes. (*Figure 4*). Thus, when a finger touches the touch panel while a voltage is applied to the electrodes of one of the conductive films, the output voltage measured at an electrode on the other conductive film is proportional to the distance (or resistance) between the touch point and the ground electrode on the first conductive film. (*Col. 6, lines 8-21*).

When two points on the touch panel of *Tokioka* are touched, the output voltage is a more complex arithmetic function of the distance between the two contact points, the distance of the closer contact point to the ground electrode, the total length of the touch panel, and the distance of each contact point from the sensing electrode. (*Col. 13, line 62, through col. 14, line 31*). Because only two voltage output measurements can be obtained from the two conductive films, the system of *Tokioka* has two equations in four unknown values (the X and Y positions of each of the two contact points). (*Col. 14, equations (4) and (5)*). Because two equations cannot be solved for four unknowns, *Tokioka* relies upon one of the contact points being made, and its position measured, before the second contact point is made. (*Col. 13, lines 26-28*). By plugging the previously

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measured positions of the first contact point into the two equations, only two unknowns are left and the X and Y positions of the second contact point can be solved. (*Col. 14, lines 47-50*).

**B. Claims 1-3, 5, 6, 8, 10-12, 14, 15 and 19**

With regard to independent Claims 1 and 10, the Applicant respectfully suggests that the Office Action fails to establish a *prima facie* case of obviousness for three reasons. First, there is no reasonable expectation of success in the suggested combination of *Gillespie* and *Tokioka*. Second, the proposed combination of references does not teach all the elements of the Applicant's invention, as set forth in the Claims. Third, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the reference teachings; in fact, the *Gillespie* reference teaches away from the use of resistive films, as employed in the *Tokioka* reference.

First, the circuitry of the *Gillespie* references digitizes the surface of the touch panel by using individual sensor lines to sense the presence of a finger at spaced-apart positions on the touch panel, while *Tokioka* uses a proportional, analog technique to sense the position of a contact point. The technique needed to overcome *Gillespie*'s admitted inability to sense the position of two contact points would, of necessity, be very different than that used by *Tokioka*. The arithmetic function of analog resistances taught in *Tokioka* would be inapplicable to the discrete collection of measured capacitances taught in *Gillespie*. Thus, there would be no expectation of success, reasonable or otherwise, in combining the teachings of *Gillespie* and *Tokioka*.

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Second, even were the two references somehow combined, the *Tokioka* reference admits to being unable to measure the positions of two contact points being simultaneously touched, as recited in independent Claims 1 and 10. In contrast, the *Tokioka* reference relies upon “[the] fact that two points are not entered at strictly the same time.” (*Col. 13, lines 24-28*). Thus, the proposed combination of references does not teach all the elements of the Applicant’s invention, as set forth in the Claims.

Third, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the reference teachings. The *Gillespie* reference recites the drawbacks of resistive membrane technologies. (*Col. 1, lines 45-62*). It then states that the drawbacks of resistive devices have led to the use of capacitive sensing of finger position. (*Col. 2, lines 22-24*). The *Tokioka* reference discusses the shortcomings of capacitive sensing of the position of a special pen-type device on the surface of a touch panel, but is silent about determining the position of a finger on a touch panel through capacitive sensing. (*Col. 1, lines 29-37; Col. 2, lines 1-5*). Finally, one of ordinary skill in the art would not be led to combine the teachings of *Gillespie* and *Tokioka* because of the significant differences in technologies employed by the two references (digital vs. analog, capacitive vs. resistive), as discussed above. Thus, neither the references themselves nor the knowledge of the person of ordinary skill in the art would suggest combining the *Gillespie* and *Tokioka* references.

For these reasons, the Office Action has not established a *prima facie* case of obviousness against independent Claims 1 and 10 (or claims depending therefrom). Accordingly, the Applicant

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respectfully requests withdrawal of the § 103 rejections and full allowance of Claims 1-3, 5, 6, 8, 10-12, 14, 15 and 19.

**C. Claims 4, 7, 13, 16, 17 and 20**

With regard to dependant Claims 4, 7, 13, 16, 17 and 20, Claims 4 and 7 depend from independent Claim 1, and Claims 13, 16, 17 and 20 depend from Claim 10. As described above independent Claims 1 and 10 are patentable. As a result, Claims 4, 7, 13, 16, and 17 are patentable due to their dependence from allowable base claims.

Section 2 of the Office Action asserts that while *Gillespie* fails to teach pressure sensing devices comprising strain gauges, *Bisset* teaches the use of a sensor pad having, as an alternative, strain gauges and that it would have been obvious to have the strain gauges, as taught by *Bisset*, in the device of *Gillespie*. The Applicant respectfully suggests that the Office Action fails to establish a *prima facie* case of obviousness for two reasons. First, the addition of the *Bisset* reference to the *Gillespie* and *Tokoika* references does not address any of the shortcomings in the *prima facie* case of obviousness noted above with regard to independent Claims 1 and 10. Second, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the strain gauges of *Bisset* with the system of *Gillespie*; in fact, the *Gillespie* reference teaches away from the use of strain gauges. (Col. 2, lines 1-8).

For these reasons, the Office Action has not established a *prima facie* case of obviousness against dependent Claims 4, 7, 13, 16, 17 and 20. Accordingly, the Applicant respectfully requests withdrawal of the § 103 rejections and full allowance of Claims 4, 7, 13, 16, 17 and 20.

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**V. CONCLUSION**

The Applicant respectfully asserts that all pending claims in the application are in condition for allowance and respectfully requests an early allowance of such claims.



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**SUMMARY**

If any issues arise, or if the Examiner has any suggestions for expediting allowance of this application, the Applicant respectfully invites the Examiner to contact the undersigned at the telephone number indicated below or at [wmunck@davismunck.com](mailto:wmunck@davismunck.com).

The Commissioner is hereby authorized to charge any additional fees connected with this communication (including any extension of time fees) or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

DAVIS MUNCK, P.C.

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